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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,225	12/12/2005	Kinya Aota	500.45682X00	2697
20457	7590	06/15/2006	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EDMONDSON, LYNNE RENEE	
			ART UNIT	PAPER NUMBER
			1725	

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/560,225

Applicant(s)

AOTA ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/12/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 5-12, 14, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Boon et al. (USPN 6325273 B1).

Boon teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process. The small diameter portion is semispherical and the shoulder is rounded (figure 2). The tool is tilted at an angle as is conventional (figure 1). The tip of the probe may be flat (figure 6a).

3. Claims 1, 5, 6, 11, 12, 14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Showa (JPN 10-230376 A, IDS).

Showa teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated.

The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process. The small diameter portion is semispherical (figure 1). The member has a trapezoidal portion (figures 2, 4 and 5 and abstract).

4. Claims 1-7, 9-14, 18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki (JPN 2001-314982 A, IDS).

Kawasaki teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process. The small diameter portion is semispherical and the shoulder is rounded with a recess around the pin. The shoulder is inclined relative to the pin (figure 2a). The tip of the probe may be flat (figures 3-1 and 3-2). The device performs spot welding (abstract) into an opening shown in figure 3-2.

5. Claims 1, 3-6, 10-12, 14 and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al. (GB 2306366 A, IDS).

Thomas teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process (page 1 lines 1-21 and page 4 lines 1-14) in which the tool may be tilted (page 5 lines 23-34). The shoulder is rounded (figure 9C) with a

recess around the pin. The shoulder is inclined relative to the pin (figure 9A). The tip of the probe may be flat (figure 2D).

6. Claims 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Ezumi et al. (US 2002/0092885 A1).

Ezumi teaches a friction stir welding tool with a shoulder and small diameter portion (pin) wherein the small diameter portion is trapezoidal and comprises a recess around the pin (figures 2 and 10 and paragraph 4).

7. Claims 1, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Aota et al. (USPN 6936332 B2)

Aota teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process. A trapezoidal member is provided on a surface of one of the members which is seated in a groove of the second member (figures 1 and 18).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Art Unit: 1725

8. Claims 1, 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Okamoto et al. (USPN 6843405 B2).

Okamoto teaches a friction stir welding method for a lap joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion used in a conventional process. A trapezoidal member is provided on a surface of one of the members which is seated in a groove of the second member (figures 7, 10 and 14).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 6-9 and 14-16 are rejected under 35 U.S.C. 103(a) as being obvious over Aota et al. (US 2003/0102354 A1).

Aota teaches a friction stir welding method for a joint wherein members are lapped and a stir welding tool is pressed into one of the members while being rotated. The tool is a conventional stir tool with a shoulder and small diameter portion comprising a semispherical pin used in a conventional process. The lapped surface is coated with Cu (paragraph 39). The tool is tilted (figure 5). Although sections are shown overlapping (figures 8 and 9) there is no disclosure of lapping members.

It would have been obvious to one of ordinary skill in the art at the time of the invention that lap welding and butt welding are obvious variations. Friction stir welding processes for both are essentially identical and use identical tools.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer

Art Unit: 1725

in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Martin et al. (USPN 6045028, curve and coating), Miyanagi et al. (US 2003/0111514 A1, curve and coating), Nishiguchi et al. (EPN 1498210 A1, recess), Bolser (US 2005/0242158 A1, coating), Murakami (US 2005/0145678 A1, spot weld) and Trapp et al. (US 2006/0086775 A1).

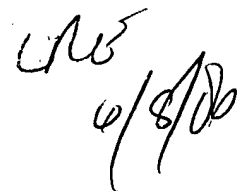
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lynne Edmondson
Primary Examiner
Art Unit 1725



LRE